CASE STUDY: FAMILY PERFORMANCE AS A DRUG-TAKING ASSISTANCE

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ABSTRACT

Introduction: Tuberculosis (TBC) is a global health problem and challenge. In Indonesia, TBC has affected 107 people within 100,000 populations with the prevalence rate of 0.7 percent. This data has placed Indonesia among the highest recorded TBC cases in the world. The implementation of DOTS strategies utilizing Drug-Taking Assistance or Pengawas Menelan Obat (PMO) is to ensure that the patients take up the prescribed medication on regular basis. Research suggests that employing family members or immediate relatives as PMO workers has increased the drug-intake the success rate. However, the result might vary across regions. **Methods:** This study specifically aims to evaluate the role of family members of PMO at the Puskesmas in the Cimahi south district, using qualitative approach. The total sampling uses to cover 30 respondents. Data collection employs winshield survey, structured interview, and FGD (Focus Group Discussion). **Result:** Data analysis using Mann-Whitney reveals that the role of family as PMO in the district under study was found to be less effective. **Discussion:** The primary cause is due to lack of education, especially their knowledge around TBC and the sense of responsibility of the role. These are all attributed to the minimum support from the Puskesmas staff in providing continuous training and mentoring.

Key words: tuberculosis, Drug-Taking Assistance or Pengawas Menelan Obat (PMO), family

INTRODUCTION

Tuberculosis (TB) is a chronic infectious disease is still a public health problem in the world, including Indonesia (global epidemic). Report of the World Health Organization (WHO) in the Annual Report On Global Tuberculosis Control 2003 states there are 22 countries that are categorized as high-burden countries for tuberculosis which Indonesia ranks third contributor TB cases after India and China. Estimates of the incidence of infectious tuberculosis (BTA +) in Indonesia is 107 per 100,000 population, while the prevalence of TB was 110 per 100,000 population (National Prevalence Survey, 2004). Results of Basic Health Research (Riskesdas) in 2010 showed that the prevalence of tuberculosis nationally 0.7 percent; in this case there was an increase compared with the prevalence figures Riskesdas 2007 of 0.4%.

Until now, tuberculosis (TB) is still a public health problem that is becoming a global challenge. Indonesia is the first country among the countries with the burden of high TV in the region to reach the Millennium Development Goals (MDGs) for TB in 2006, ie 70% discovery of new cases of BTA positive and 85% recovery (MOH, 2011). These results put Indonesia as number five of five countries with the highest TB burden in the world, down from the previous third. Nevertheless TB remains a serious threat to the entire population of Indonesia. According Triretno (2011), the high incidence of TB in people with HIV and the increasing incidence of Multi Drug Resistance (MDR) causes more difficult to control tuberculosis.

TB control needs to get more attention from the government because of the impact that is very detrimental. When linked with the influence of the economic situation, TBC will affect the domestic economy, society and nation, because most (75%) of tuberculosis attacking the productive age (14-59 years). A TB patient will experience direct economic losses for treatment and indirect costs for transport as well as loss of working time of 3-4 months which is comparable to 20-30% of household a year income. If a person died of tuberculosis, the impairment loss is proportional to the family average income for 15 years (WHO, 2003). Gani, A. (2004), estimates the national economic losses caused by tuberculosis, almost equal to the total health budget of the Indonesian government.

TB prevention programs with the strategy of Directly Observed Treatment Shortcourse (DOTS) in Indonesia have been carried out since 1995, and until now has been a lot of progress (Philip, 2002). The progress can be seen from the tendency to increase the

achievement of program indicators, namely Case Detection Rate (CDR), Cure Rate (CR) and Conversion Rate. DOTS strategy in Indonesia applied by using the Drug Taking Assistance. With this strategy, a national incidence of TB already be suppressed; although in some areas of tuberculosis remains high.

Drug Taking Assistances or Pengawas Menelan Obat (PMO) is someone who helps TB patients to undergo treatment with reminding and watching to swallow the drug and give encouragement so that TB patients do not despair (PPTI, 2010). A TB patient should receive medication supervision in swallowing due to treat tuberculosis must take medication for a long time at least 6 months so many patients who feel bored. Usually TB patients after taking drugs for 2-3 weeks are already feeling healthy so they do not want to continue medication until finish. It is very dangerous because it cause patients resistant to anti-tuberculosis drugs.

At the beginning of the program the person appointed to be the PMO are medical workers or community leaders, but in the development so mane patient's family as PMO. Istiawan reserach, Sahar, and Bachtiar (2006) proves that the role of the PMO families with clients tuberculosis prevention behavior showed a strong relationship (r = 0.656). The pattern of the relationship is patterned positive, meaning that the higher the role of the family PMO higher the client's behavior tuberculosis prevention for the prevention of transmission. The results are consistent with research conducted by Noviadi, Kusumawaty and Ikop (1999), that the family's role in supervise swallow the drugs will improve prevention behaviors of TBC clients to prevent transmission at home.

The use of family as PMO also improve patient compliance to swallow drugs considering family is the main source of support for patients. This is proved in the Hutapea research (2006), which shows the value f = 5.502 and p = 0.001 (p <0.05) and a correlation coefficient r = 0.210. The analysis results show higher support from family, the higher level of patients complience taking anti-tuberculosis drugs.

Some result of studies have been used as the basis implementation of the policy use of family as PMO in some areas. PHC South Cimahi is one of area in Cimahi, West Java, which uses the family as PMO. The policy is applied beside based on result of studies also with some consideration; among others, the limited number of doctors and nurses in health centers are not comparable with high cases of tuberculosis.

Characteristics of wor area Puskesmas South Cimahi is a sub-urban area and used as centers of development of industrial areas that attract many newcomer; make the village has a high density. Dense housing, less ventilation and light, and low public understanding of TB proved by the negative stigma about TB makes the spread of tuberculosis in the region is quite high, generally concentrated in a few locations so forming pockets of tuberculosis.

Until now Puskesmas South Cimahi have never done an evaluation about the effectiveness the use of the family as PMO. Although several researches shows that a high level of effectiveness, but the difference area with various characteristics can show different results. Based on these descriptions, this study was conducted to identify the implementation the role of the family as PMO as evaluation materials.

METHODS

This study was a descriptive interpretative case study with a quantitative approach. Primary data collection techniques conducted by winshield survey and structured interviews. Validity and reliability test of the instrument interview obtained internal consistency (Cronbach alpha) of 0.82. Respondent Interviewconsist of family member as PMO and tuberculosis patients who are undergoing treatment with Anti-Tuberculosis Drugs (OAT) which amounted to 30 respondents and taken by total sampling. Observations carried out thoroughly on the environment and condition of the patient. Secondary data were obtained through the study of documentation and interviews with the person in charge of health centers and the management of PPTI and conducted focus group discussions involving the PMO, tuberculosis patients and health cares specialized PMO. The main data analysis conducted on two independent samples by using the Mann-Whitney test. The study was carried out in the wrking are of Puskesmas South Cimahi, Cimahi city, West Java Province. The review process takes place

during the Community Nursing residency that began October 1 until December 19, 2012.

RESULTS

The table 1 indicates that the number of PMO in Puskesmas South Cimahi working area based on sex showed a insignificant difference. The results of interviews with the holder of the program conducted subjectively based on ability, spare time, and cooperative attitude to do PMO; without considering the difference of sex.

PMO education level in Puskesmas South Cimahi quite varied, most have low education levels. 30% PMO primary school education, 23.3% junior high school, 26.7% are even PMO did not finish primary school, and only 20% PMO has a good educational categories namely high school graduates. The low level of education is directly proportional to knowledge level PMO about tuberculosis and the task as PMO. This is proved by the table 1 above shows that there are 11 people (36.7%) PMO has less knowledge categories, and 6 (20%) PMO have very less knowledge category; while the PMO with a good knowledge category there are 9 people (30%) and only 4 people (13.3%) PMO which has a very good knowledge category.

Table 1. The characteristics of respondents by sex, level of education, and PMO knowledge about tuberculosis and PMO Duties in Puskesmas South Cimahi.

	Criteria	Frequency	Persentage	Amount
Sex	Male	14	46,7	30
	Female	16	53,3	
Education	No school	8	26,7	30
	Primary School	9	30,0	
	Junior High School	7	23,3	
	Senior High School	6	20,0	
Knowledge PMO About TB and Duties PMO	Very less	6	20,0	30
	Less	11	36,7	
	Good	9	30,0	
	Very Good	4	13,3	

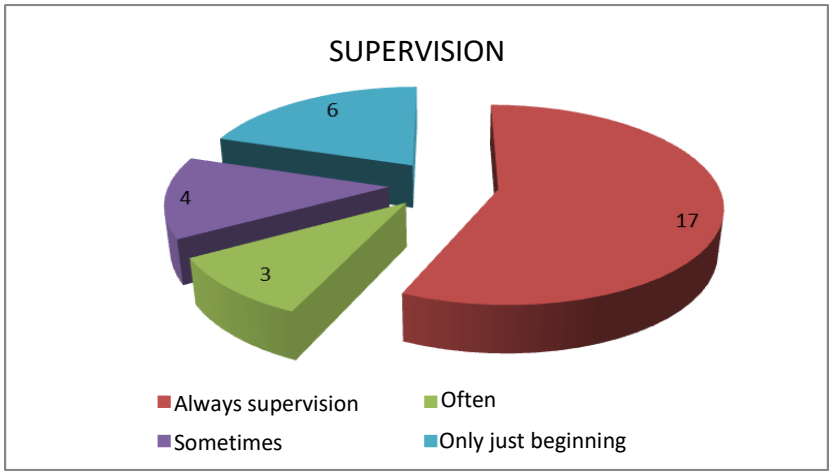

Figure 1: Implementation Supervision PMO In OAT Swallowing

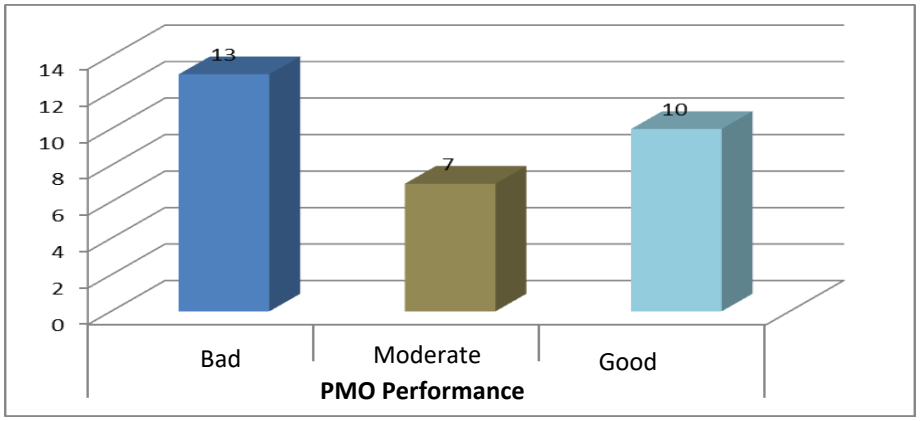

Figure 2: Performance PMO in Puskesmas South Cimahi.

Figure1 shows that the implementation task as PMO in monitoring swalllowing drugs to TB mostly (56.7%) went well. Yet still, it is a matter because regular supervision until the treatment complition should be done by entirw PMO (100%). In Puskesmas South Cimahi there are three PMO (10%) who perform a monitoring role quite often but not routinely, four PMO (13.3%) supervise occasionally, and six PMO (20%) to supervise at the beginning of the treatment program only.

The principle of anti-tuberculosis treatment requires regular treatment until completely finished. In fact, there is a presumption that it is better not given the drug than taking medication but irregular or incomplete. This relates to the risks that may occur, which is to TB germs reseistence to the drugs adding greater possibilities the failure of medication. PMO in the region of South Cimahi Puskesmas mostly have poor performance quality. PMO performance quality is measured from 4 (four) main tasks PMO. Based on table 2 knowing that 13 person (43.4%) PMO who have poor performance qualities, 7 people (23.3%) had moderate performance quality, and there are only 10 person (33.3%) PMO that has good performance.

Successful treatment of tuberculosis patients was strongly influenced by patient compliance in the treatment program. Compliance tuberculosis patients swallow anti-tuberculosis drugs is based on the regularity of swallowing drugs on schedule based on the type and dose of medication. Patients with tuberculosis in working area of Puskesmas South Cimahi largely disobidient to the treatment program. Table 3 shows that there are 22 people (73.3%) patients inobidient took the drug, and there are only 8 people (26.7%) patients who complience swallowed the drug. Inobidient patient swallowing the drug is directly proportional to the role of supervision by the PMO.

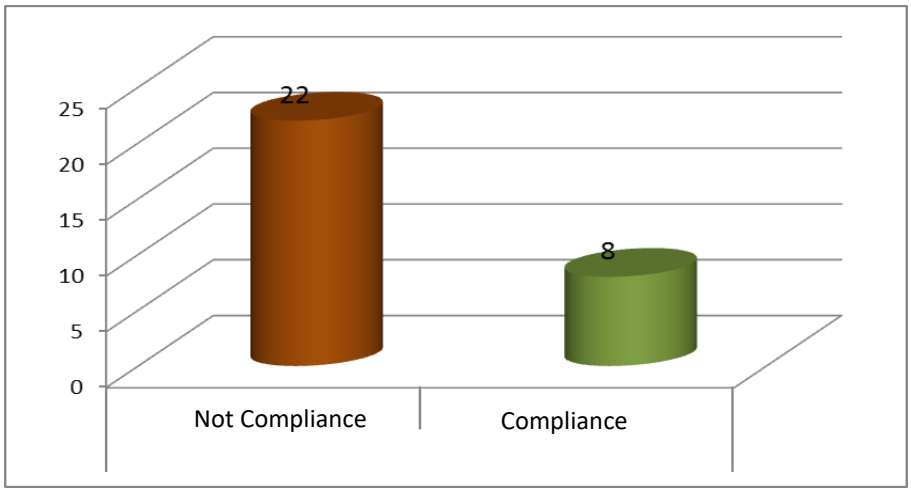

Figure 3: Tuberculosis Patient Compliance Swallowing Anti Tuberculosis inPuskesmas South Cimahi.

Table 2: Test Different 2 independent samples.

	Gender	Education	Knowledge	Supervision	Performance
Mann-Whitney U	39.000	19.500	26.500	49.500	35.000
Wilcoxon W	75.000	272.500	279.500	302.500	288.000
Z	-2.658	-3.323	-3.016	-2.009	-2.665
Asymp. Sig. (2-tailed)	.073	.001	.003	.045	.008
Exact Sig. [2*(1-tailed Sig.)]	.021[b]	.001[b]	.003[b]	.070[b]	.012[b]

Different test independent samples using Mann-Whitney to determine the relationship between gender and complience patient swallowing drugs. Category of education level, PMO knowledge about tubercolusis and the tasks, monitoring implementation of swallowing the drug, and quality of PMO. Based on table above, obtained $p = 0.073 > \alpha$ (0.05) gender catagory. This gives conclusion that there is no significant relationship between gender with patient compliance to swallow medicine. Category level of education, knowledge about tuberculosis and PMO tasks, monitoring the implementation of swallowing drug, and the quality of PMO performance, each obtained $p < \alpha$ (0.05). It can be concluded that there is a significant relationship between the level of education, PMO knowledge about tuberculosis and the PMO tasks, monitoring the implementation of swallowing the drug, and PMO perforemce quality to patient compliance to swallow drugs.

DISCUSSION

There is no significant difference in respondents' level of understanding about duties and obligations as the PMO between women and men ($p = 0.641$). Thus gender should not be considered in the selection of a PMO. Consideration of PMO election can be based on education level, counseling historry of attending counseling about TBC, motivation, sense of responsibility, and availability of time. Election of family members as PMO also should be done by considering the individual characteristics. This is compatible the opinion of Skiner (1983) in Notoatmodjo (2003) that the individual characteristics that are internal factors influence someone health behavior. Positive health behavior can be realized in the implementation of duties and obligations, including as PMO; regardless of gender.

Health behavior change in connection with role implementation as PMO effected by internal and external individuals. According Sarwono (2007), the individual internal factors include the perception, motivation and emotion; individuals external factors consist of social aspects of culture, communication and interaction between individuals, human resources can be utilized, and encouragement of the social environment. Most of the PMO in Puskesmas South Cimahi have a background in elementary education and school or did not complete primary school background with the level of knowledge about tuberculosis and the PMO duties are generally less. Analysis of relationship between the two resulted in a significance level of $p = 0.000$, which means that the higher the education, the better the level of knowledge; contrary the lower the level of education the less knowledge. Thus, it is understandable if the failure rate of TB treatment in the region are still quite high. It is proved by the conversion rate of BTA positive in 2011 only reached 60.86% and the cure rate in the same year only 68.33%. Based on the description it seems clear that there is a less precise in the selection PMO in PMO South Cimahi region.

Purnomo's study (2009) found that patients get less health information from PMO officials related to lower levels of education and knowledge possessed. Relation between patient and PMO also affect the success of treatment. The study found a significant relationship between the frequency of giving information about TBC with knowledge and compliance clients treatment. In this case the PMO is less able to provide health information to the patient as himself have limited knowledge.

Most of the PMO in the Health Center South Cimahi had attended counseling about TB. This is understandable considering every discovery of new cases will appoint PMO and

always accompanied by the provision of information about tuberculosis as well as the duties and obligations of a PMO. Also in the region there has also been a special cadre PMO scattered in every pillar of citizens who are quite active in the TB program. So it is surprising that it is still 13 PMO (43%) who claimed never have received information about tuberculosis. It may caused by misperception to questions and respondents did not honest to answer the question.

Counseling about TBC specifically and directly to the public according to the majority of respondents had never done. However, the delivery of health information associated with TB has never been done in the neighborhood health center, where the activities are superimposed on health promotion programs (Promkes) and environmental health (environmental health), but these activities are not routinely performed. As well as the delivery of information by health professionals to patients who went to the clinic has also been given.

The amount numbers of non-compliance will lead to high treatment failure and cause more found of TB patients with BTA which resistence with standard treatment. Such circumstances would complicate the eradication of tuberculosis in Indonesia as well as aggravate the burden of the government. Referring to various factors that cause non-complience tuberculosis patients take medication, it can be concluded that the human factor, in this case people with tuberculosis is the main factor for non-compliance taking medication.

A total of 13 people PMO (43%) in Puskesmas South Cimahi have poor performance quality. This situation is directly proportional to the low level of education PMO. The analysis showed that education positive contributes to the quality of the performance of PMO ($p = 0.008$). In this case, poor performance of the PMO in the Puskismas South Cimahi because of low level of education. Poor performance of PMO proved by PMO routine monitoring to the clients in swallowing drugs only 17 (56.7%) who routinely perform daily supervision. The rest are 3 people (10%) often enough to supervise but not regularly supervise; 4 people (13.3%) occasionally conduct supervision to swallowing drugs; and 6 people (20%) only conduct supervision at the beginning of the treatment program. Researchers suspect that the presence of the treatment failure rate in the region Puskesmas South Cimahi which are caused by not optimal the role of supervision to swallow drugs by PMO. The observation results prove that 5 (five) of the 30 patients with TB in the region is a recurrent cases. Through further study obtained information that the recurrent patient has an incomplete treatment treatment history (drop out).

Based on interviews obtained information that there are four main reasons respondents did not conduct ssupervision until finish, namely bored, believe the client will swallow the medication even without supevision, forget, and have no time. It also obtained information that after taking the drug for two or three weeks had client feel recovered so do not need to take medication regularly. These reasons indicate how the knowledge of the client and the PMO about tuberculosis is still very low. The situation is more serious related to possibility of germs resistence against OAT.

The Analysis of relationship between the level of knowledge and the role of supervision has a positive relationship ($p = 0.013$), which means that the higher the level of knowledge the better in performing supervision role in swallowing drugs and vice versa. The level of knowledge is directly proportional to levels of education. However in this study contained PMO with poor knowledge and education but able to perform supervision tasks properly. This is possible by exposure of the respondents with information about TB through counseling ever got. Besides motivation, responsibility and time availability also contribute. Heriyanto and Kromalig research (2004) identified bored as the biggest obstacle factor that facing a PMO (45.5%).

PMO Knowledge also affect client complience to drink OAT regularly. Data study proves that the better the level of knowledge PMO, so the client regularly ingest the drug. The high level of client non-compliance to swallow drugs, as many as 22 people (73.3%) of course closely related to the low level of PMO knowledge. It shows that efforts to control tuberculosis in the region are still not optimal.

PMO Performance measured by the implementation of the four basic tasks PMO which is to ensure the patient swallows the medication correctly and regularly, reminding

patients to re-check sputum at a set time, give counseling about and suggest family member of patient to consult if there is a suspected tuberculosis, and supervise side effects of drugs. In general, the performance of PMO in the region of South Cimahi PHC was low proved by 13 people PMO (43%) had a poor performance and only 10 people (33%) had a good performance. Generally, all PMO are only perform the main tasks, namely to supervise and ensure the client swallow medication; even then still not optimal because only 17 people PMO (56.7%), which ensures the client took the drug until finish. While the other three main tasks mostly ignored. The situation is in line with the results of previous interviews that mentions four reasons, namely bored, believe the client will swallow the medication even without supervision, forgetting, and no time. Analysis of gender relations and the PMO performance showed that there was no significant difference ($p = 0.441$). PMO performance quality is influenced by the level of education, history attend counseling of tuberculosis, motivation, responsibility, and availability of time. In this case the policy of health centers and local government political commitment needs to be updated.

Negative stigma about the tuberculosis indicates that people's knowledge is still low. The stigma of tuberculosis in Puskesmas South Cimahi known through information obtained from the society. It is proved by the results of the survey were asked about how the perceptions of respondents about TB before becoming PMO. The survey results are get 11 people (37%) said that tuberculosis is a hereditary disease, 1 person (3%) said that tuberculosis is a shameful disease, 4 people (13%) said that tuberculosis is a curse disease. Stigma is also implied from shyness the TB patient that expressed by 10 people (33%).

Bad effects of stigma about TB is the social isolation of the community to patients and patients themselves who withdrew from public life. Even there the information obtained from the cadre that there was a patient in the region who are migrants from outside the region due to expelled by the local residents. There is still a stigma to prove that TB control efforts are still not successful. Caunseling and socialization conducted by health officials apparently have not given the expected results. It may be that these efforts are not done properly, targets, methods, media, and approach. Furthermore, the stigma contributes to the poor performance of PMO that effect noncomplience client to swallow drugs. Most of the TB patients in the region Puskesmas South Cimahi taking medication irregularly, around 22 people (73.3%).

Treatment compliance is defined as an attitude and behavior that follow each suggestion and instructions of treatment is given with full awareness. Compliance implies indirect submissive and cooperation attitude of the patient for his own good. PMO is the person who supervise and reminding patients to take medication. The existence of a PMO suspected as a factor that affect treatment compliance. Purnomo study (2009) proved that the existence of the PMO are factors that influence to the complience of treatment tuberculosis patients

The increasing of stigma and existence tendency to treatment failure should consider as program challenge. Evaluation of preventive and promotive efforts must be carried out, especially the level of education and public awareness is still low despite health education has often given. It may be that the situation is the effect of inaccuracy of health management. Efforts to improve health programs synergy with other sectors is expected to be a wise solution.

CONCLUSION

Family empowerment as PMO in Puskesmas South Cimahi is less effective. Most PMO have a poor performance (43%) with only conduct one of the four main tasks of PMO is not optimal. Factors that affect the poor performance of PMO include low levels of education, the lack of quantity and quality of education and socialization of tuberculosis, and the lack of PMO guidance by health center personnel. Poor performance of the PMO increase the rate of treatment failure and disease relapse. Thus, it is suggested that in the selection of the PMO should consider aspects of education, motivation, responsibility, and availability of time. Puskesmas officers are also expected to provide guidance/coaching to the PMO periodically, for example in the form of PMO monthly meetings.

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